

ABSTRACT

PT. Perkasa Inakakerta is a coal mining company located at Bengalon District, East Kutai, East Borneo. This company uses open pit method by building benches in the process of mining. One of the most productive pit is PIT 71. The increasing productivity of PIT 71 urge the company to open the new ones, namely PIT 71B.

Before this pit can earn it first productivity, the geotechnical investigation should be conducted to ensure the physical and mechanical behavior of the material in the location of PIT 71B. This investigation should be taken in order to give the best recommendation. By achieving the best recommendation, the failure of the slope can be minimalized and the productivity can be achieved. By looking at the topografy, geology condition and analyzing the seam target, company decided to conduct geotechnical drilling. The geotechnical drilling conduct in three main holes which are PIK-GT-72, PIK-GT-10A, and PIK-GT-10.

The sample from the geotechnical drilling will be tested in laboratory to get physical and mechanical behavior. The data from the laboratory test can be used as the properties at the geology modeling. The modelling process used Slide V6 as a software.

From the result of modelling, the recommendation of single slope bench has height 10 m and angle 60° . Recommendation for Highwall slope has height 80 m, angle 45° , and berm's width 5 m with safety factor 1,32. Recommendation of Lowwal slope has height 80 m and angle 30° with safety factor 1,85. Sidewall slope has height 80 m, angle 45° , and berm's width 5 m with safety factor 1,30.